

JEFFERSON BARRACKS
RIFLE RANGE



US Army Corps
of Engineers
HUNTSVILLE DIVISION

Site:	<i>Jefferson Barracks</i>
ID #	<i>MON000703433</i>
Break:	<i>1.3</i>
Other:	<i>10/94</i>

gmm

Defense Environmental Restoration Program
for
Formerly Used Defense Sites
Ordnance and Explosive Waste
Chemical Warfare Materials

ARCHIVES SEARCH REPORT

Jefferson Barracks Rifle Range

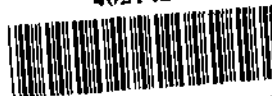
Barnhart, Missouri

Project Number - B07MO014500¹

OCTOBER 1994

Prepared by
US ARMY CORPS OF ENGINEERS
ST. LOUIS DISTRICT

40214200



SUPERFUND RECORDS

Ordnance and Explosive Waste
Chemical Warfare Material
Archives Search Report
for the former
Jefferson Barracks Rifle Range
Barnhart, Missouri
Project Number- B07MO014500

TABLE OF CONTENTS

	<u>Page</u>
1.0 Introduction	
1.1 Authority	1-1
1.2 Subject	1-2
1.3 Purpose	1-2
1.4 Scope	1-2
2.0 Previous site investigations	2-1
3.0 Site and site area description	
3.1 Location - detailed site description	3-1
3.2 Past uses of the site	3-1
3.3 Current uses of the site	3-3
3.4 Demographics of the area	3-3
4.0 Physical characteristics of the site	
4.1 Geology/physiography	4-1
4.2 Soils	4-1
4.3 Hydrology	4-2
4.4 Weather	4-3
4.5 Ecology	4-4
5.0 Real Estate	
5.1 DOD ownership	5-1
5.2 Present ownership	5-1
5.3 Significant past ownership other than DOD	5-1
6.0 OEW/CWM site analysis	
6.1 Historical summary of OEW/CWM activities	6-1
6.2 Records review	6-2
6.3 Summary of interviews	6-3
6.4 Site inspection	6-3
7.0 Evaluation of ordnance contamination	7-1
8.0 Conclusions and Recommendations	8-1

Ordnance and Explosive Waste
Chemical Warfare Material
Archives Search Report
for the former
Jefferson Barracks Rifle Range
Barnhart, Missouri
Project Number - B07M0014500

APPENDICES

- A. REFERENCES
- B. ACRONYMS
- C. REPORTS/STUDIES/LETTERS/MEMORANDUMS
- D. HISTORICAL PHOTOGRAPHS
- E. INTERVIEWS
- F. NEWSPAPERS/JOURNALS
- G. PRESENT SITE PHOTOGRAPHS
- H. HISTORICAL MAPS/DRAWINGS
- I. RISK ASSESSMENT PROCEDURES FOR OEW SITES
- J. REPORT DISTRIBUTION LIST

PLATES

- 1. SITE SURVEY, JEFFERSON BARRACKS RIFLE RANGE, SEPTEMBER 1994
- 2. AERIAL PHOTOGRAPH, 1994

1

1

1.0 INTRODUCTION

1

F

E

C

1

1.1 AUTHORITY

In 1986, Congress established the Defense Environmental Restoration Program at 10 U.S.C. 2701 et.seq. This program directed the Secretary of Defense to "carry out a program of environmental restoration at facilities under the jurisdiction of the Secretary."

:

6

3

6

1

:

1

In March, 1990, the EPA issued a revised National Contingency Plan. Under 40 C.F.R. 300.120, EPA designated DOD to be the removal response authority for incidents involving DoD military weapons and munitions under the jurisdiction, custody and control of DoD.

Since the beginning of this program, the U.S. Army Corps of Engineers has been the agency responsible for environmental restoration at Formerly-Used Defense Sites (FUDS). Since 1990, the U.S. Army Engineering and Support Center, Huntsville, has been the Mandatory Center of Expertise and Design Center for Ordnance and Explosives.

1.2 SUBJECT

The March 1990 National Oil and Hazardous Substances Pollution Contingency Plan given in 40 CFR part 300 is the latest version of the NCP. Paragraph 300.120 states that "DOD will be the removal response authority with respect to incidents involving DOD military weapons and munitions, or weapons and munitions under the jurisdiction, custody, and control of DOD."

on April 5, 1990, the U.S. Army Engineer Division, Huntsville (USAEDH) was designated as the USACE Mandatory Center of Expertise (MCX) and Design Center for ordnance and explosive waste. As the MCX and Design Center for OEW, USAEDH is responsible for the design and successful implementation of all Department of the Army OEW remediation actions required by CERCLA. USAEDH will also design and implement OEW remediation programs for other branches of the Department of Defense when requested. In cooperation with the Huntsville Division, the St. Louis District has been assigned the task of preparing Archive Search Reports for those Formerly Used Defense Sites (FUDS) which concern any aspect of chemical munitions.

1.2 Subject

The Jefferson Barracks Rifle Range, situated near Barnhart, Missouri, was used for light weapons practice by troops from Jefferson Barracks in St. Louis County, Missouri. Authorization of the acquisition of the land was given on 11 June 1943. In mid August of that year, the DoD leased 1,517.55 acres of land for use as the Jefferson Barracks Rifle Range. The Army made improvements on the site, including two 1,000 yard M-1 ranges, a .45 cal machine-gun range, a mess hall, and storage buildings.

Use of the Jefferson Barracks Rifle Range was concluded by March, 1944. By 30 June 1946, all leases covering the site were terminated by the DoD.

1.3 Purpose

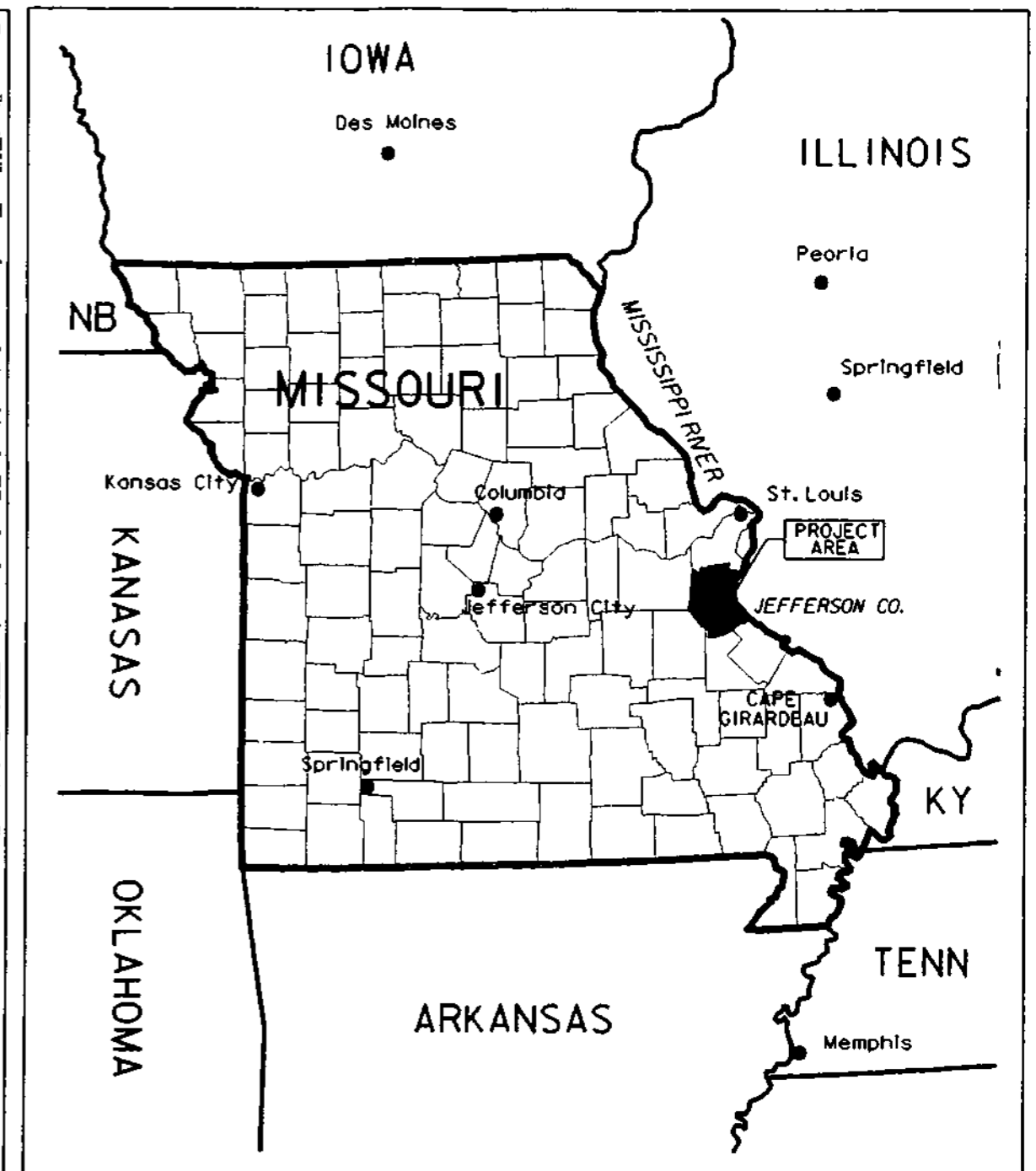
To determine through archives search the types, quantities, and probable locations of Ordnance Explosive Waste (OEW) abandoned by the Department of Defense (DOD) prior to relinquishing ownership.

1.4 Scope

This investigation focused on that area identified in Inventory Project Report (INPR) #B07MO014500 Jefferson Barracks Rifle Range, Jefferson County, Missouri. This report presents the site history, site description, real estate ownership information, results of a visual site inspection, confirmed ordnance presence based on available records and the site inspection, and evaluation of potential ordnance contamination based on site ordnance components and site information.

2.0 Previous site investigations

a. Defense Environmental Restoration Program - Formerly Used Defense Sites, Site Survey Report, Jefferson Barracks Rifle Range, Jefferson County, Missouri, Site Number B07MO14500, dated 24 January 1994.



NOT TO SCALE

MOSS HOLLOW RIFLE RANGE
JEFFERSON BARRACKS MILITARY POST
JEFFERSON COUNTY, MISSOURI
DERP-FUDS* B07M0014500
PROJECT LOCATION MAP

PROJ. DATE: SEPT. 1994	DATE OF MAP: 1969
4-OCT-1994 16:19	/N/0EW94DT/SITET32/MAP/M00145.DGN - BARNHVIC & BARNVICA.CIT

3.0 Site and site area description

3.1 Location

The site of the former Jefferson Barracks Rifle Range is located two miles west of Barnhart, Missouri, approximately 30 miles south of St. Louis. Personnel wishing to locate the 1517.55-acre site should fly into Lambert International Airport in St. Louis. Upon leaving the airport, travel east on Interstate 70 until it merges with Interstate 55 near downtown St. Louis. Continue south on Interstate 55 until the Barnhart/Antonia exit. Turn right on and continue going straight for approximately two miles. Turn left on Moss Hollow Road to enter the site of the former ranges.

3.2 Past uses of the site

Prior to DoD use, the land comprising the Jefferson Barracks Rifle Range consisted of farmland. Authorization of the acquisition of the land was given on 11 June 1943. In mid August, the DoD leased 1,517.55 acres of land for use as the Jefferson Barracks Rifle Range. The Army made improvements on the site, including two 1,000 yard M-1 ranges, a .45 cal machine-gun range, a mess hall, and storage buildings.

A 2,000 man bivouac or camp area was also available at the site. Troops using the range would march to the site and establish temporary cantonment areas. Physical training was conducted at the bivouac area.

Use of the Jefferson Barracks Rifle Range was concluded by March, 1944. By 30 June 1946, all leases covering the site were terminated by the DoD.

3.3 Current uses of the site

The site of the former Jefferson Barracks Rifle Range is owned by a number of private individuals and small businesses. Much of the property is comprised of farm land that has been plowed and planted over the years since DoD use.

3.4 Demographics of the area

The former Jefferson Barracks Rifle Range was located in Jefferson County, Missouri, near the City of Barnhart. This community includes centers of activity such as Case and Bucks Bar & Grill, the Barnhart Flea Market, plus several small parks located throughout the area.

The total population of Barnhart, Missouri is 4,911 distributed over an area of 1.8 square miles for a population density of 2,728 persons/square mile. The total population of Jefferson County, Missouri is 163,800 distributed over an area of 661

square miles for a population density of 248 persons/square mile. This population and area information is based on the U.S. Department of Commerce, Bureau of the Census, 1990 statistics, and telephone interviews.

Both telephone interviews and County Business Patterns (1990) assisted in developing a business profile of the area. The City of Barnhart is not diversified. The businesses in the area are service and retail oriented.

Concerning industry, Barnhart is not an economically diverse community. The community supports no major industries.

Housing in Barnhart is composed of both single and multi-family homes. There is new development in the Barnhart area. Recent and planned development includes residential dwellings and rebuilding from the flood of 1993.

The ancestry in Barnhart is not diverse. The percent of those under the age of 18 is 35.9%, over 65 years is 4.3%. The median age is 29. Approximately 99% of the population is White, with Black, Hispanic, American Indian or Eskimo, and Asia or Pacific Islander making up less than 1%. There are approximately 1,481 housing units with a median value of \$68,100. The work force, based on the number of workers per class in Jefferson County, is broken down into the following: 16.8% manufacturing, 0.8% agriculture, 28.3% services, 37.6% trade and finance, and 16.2% other non-agriculture.

4.0 Physical characteristics of the site

4.1 Geology/physiography

The Jefferson Barracks Rifle Range is located in the Salem Plateaus section of the Ozark Plateaus province. As a sectional name the term has been extended to include the area in which the topography is developed mainly on rocks of Ordovician and older age. Limestones and dolomites are the most prevalent rocks. Dips to the east of the Ozark dome are of the order of 2 to 4 m/km northeastward.

The formations exposed in this area are of Middle and Upper Ordovician age. Upper Ordovician rocks are represented by the Cape limestone and overlying Maquoketa Shale. The contact of the Cape Limestone with the underlying Kimmswick Limestone is a 'welded contact,' not visibly apparent. This contact represents a disconformity between Late Middle Ordovician and Middle Late Ordovician. Kimmswick strata were partially removed before Upper Ordovician deposition. Post-Ordovician pre-late Devonian erosion removed most Upper, and in some cases Middle, Ordovician rocks before Upper Devonian deposition. The lenticular limestone overlying the Maquoketa Shale has been identified as the Upper Devonian Glen Park Limestone, which is overlain by the Lower Mississippian Bushberg and Bachelor Sandstone. The Osagean series is represented by the Fern Glen Formation, no Kinderhookian equivalents are present (Thornbury 1965).

4.2 Soils

Soil Profile						
DEPTH (CM)	SOIL DESCRIPTION	PERCENTAGE PASSING SIEVE NUMBER			LIQUID LIMIT	PLAS- TICITY INDEX
		#4	#40	#200		

4.3 Hydrology

4.3.1 Ground Water

This site is within the Ozark Plateaus Aquifer System. The aquifer system is composed of five geohydrologic units, from the stratigraphically highest to lowest, the Springfield Plateau Aquifer, the Ozark confining unit, the Ozark aquifer, the St. Francois confining unit, and the St. Francois aquifer. The site

is underlain by the Ozark Aquifer.

The Ozark aquifer includes a sequence of Middle Devonian through Upper Cambrian formations that vary in water-yielding capacity, but collectively are a regional aquifer. The aquifer consists of dolostone, limestone, sandstone, chert, and shale. The upper boundary of the aquifer is the base of the Maquoketa Shale. The Potosi dolomite is the basal formation in the aquifer. The aquifer provides most of the water to municipal, industrial, and domestic wells in the Ozark area. The depth of the aquifer is about 900 m.

Ground water in the Ozark aquifer in the Salem Plateau is unconfined and the potentiometric surface of the aquifer is principally affected by the major topographic features of the plateau. Shallow ground-water movement in the Salem Plateau is from the upland areas between rivers and streams toward the valleys where the water discharges as baseflow. However, vertical changes in the lateral hydraulic conductivity of the thick aquifer are such that flow in the deeper parts of the aquifer is controlled only by regional topographic features and large rivers.

Yields from deep wells in the Salem Plateau open to the Ozark aquifer may exceed 1000 gallons per minute (Imes 1988).

4.4 Weather

The Jefferson Barracks Rifle Range site is located along and south of a 1/2 mile reach of Glaize Creek, about 25 miles south of the downtown St. Louis area. St. Louis, Missouri, at the confluence of the Missouri and Mississippi Rivers, is near the geographical center of the United States. The area feels the effects of the warm moist air from the Gulf of Mexico and the cold air masses from Canada. The conflict along the frontal zones of these invading air masses provides a variety of weather conditions.

Winters are brisk with temperatures dropping to zero or below generally only two or three days per year. Snowfall averages about 18 inches per season. Temperatures of 32 degrees or less occur less than 25 days per year, while temperatures of 90 degrees or higher occur about 35-40 days a year. The prevailing wind direction is from the south for May through November and from the northwest for December through April.

Precipitation averages about 34 inches per year. The winter months are the driest while the spring months of March through May are the wettest. Thunderstorms occur between 40 and 50 days per year, with a few being severe, causing hail and damaging winds. Tornadoes have produced damage and loss of life in the

area. Climatological data for the area are summarized in TABLE 1. Data were collected at the National Weather Service meteorological station at St. Louis, Missouri, about 35 miles north-northwest of the Jefferson Barracks Rifle Range site.

CLIMATOLOGICAL DATA FOR ST. LOUIS, MISSOURI
TABLE 1

Month	Temperature (F)		Precip.	Wind	Wind	Direction
	Average		Average	Average	Velocity	
	Min.	Max.	Monthly Mean	(in.)	(mph)	
Jan	19.9	37.6	28.8	1.72	10.6	NW
Feb	24.5	43.1	33.8	2.14	10.8	NW
Mar	33.0	53.4	43.2	3.28	11.8	WNW
Apr	45.1	67.1	56.1	3.55	11.4	WNW
May	54.7	76.4	65.6	3.54	9.5	S
Jun	64.3	85.2	74.8	3.73	8.8	S
Jul	68.8	89.0	78.9	3.63	8.0	S
Aug	66.6	87.4	77.0	2.55	7.6	S
Sep	58.6	80.7	69.7	2.70	8.1	S
Oct	46.7	69.1	57.9	2.32	8.9	S
Nov	35.1	54.0	44.6	2.53	10.1	S
Dec	25.7	42.6	34.2	2.22	10.4	WNW
Annual	45.3	65.5	55.4	33.91	9.7	S

Source: NOAA 1992. Local Climatological Data of St. Louis, Mo.

4.4 Hydrology

The Jefferson Barracks Rifle Range site is bounded on the north by Glaize Creek and on the west by Moss Hollow Creek, a tributary of Glaize. Most of the site is composed of narrow ridges, deep ravines and is heavily wooded. Elevations generally range from 500-850 feet Net Geodetic Vertical Datum (NGVD). The only relatively level ground is along the floodplain of Glaize Creek, the actual site of the firing range. Ground elevations in the vicinity of the range are less than elevation 430 NGVD. At the range, the drainage area of Glaize Creek is about 20 square miles. The drainage area of Moss Hollow Creek varies from 8.3 square miles at its mouth, just upstream of the rifle range site, to 1.9 square miles at the southern boundary of the overall site.

The St. Louis District of the Corps of Engineers has prepared a flood insurance report¹ for streams within Jefferson County, including Glaize and Moss Hollow Creeks. The 1% annual chance (100-year average recurrence interval) flood stage at the rifle range site is about elevation 428, likely flooding at least

¹ Flood Insurance Study, Jefferson County, Missouri, Unincorporated Areas (Preliminary), Federal Emergency Management Agency, September 1993.

part of the site. The 1% chance flood for Moss Hollow Creek has also been estimated for the entire length of the site and varies from 7-12 feet deep from the channel bottom to the water surface. Out of banks flows on Moss Hollow Creek would be relatively shallow and of short duration. Glaize Creek flooding durations would be 6-12 hours at most. Calculated peak discharges for the two streams are shown in TABLE 2. No hydrologic records have been collected for either Glaize Creek or Moss Hollow Creek.

The Glaize Creek basin is slowly urbanizing, although this development is not expected to affect flood levels at the site in the near future. However, a modern, divided highway is in the detailed planning stage by the Missouri State Highway Department, which could affect site hydrology and hydraulics. The highway, planned as an outer, circumferential highway for the Metro St. Louis region, would pass a few hundred feet north of the rifle range site, in the Glaize Creek floodplain. Depending on the final location and design of the highway, site drainage and flood patterns could be adversely affected.

TABLE 2
PEAK DISCHARGE VALUES (cfs)

Stream	10-yr.	50-yr.	100-yr.	500-yr.
Glaize Creek	6,400	11,500	15,300	18,800
Moss Hollow Cr. at mouth	na	na	6,700	na
at upstream boundary	na	na	3,100	na

4.5 Ecology

Information concerning threatened and endangered species for the Jefferson Barracks Rifle Range area has been received from the U.S. Wildlife Service and the Missouri Department of Fish and Game-Natural Diversity Data Base: Rarefind.

The U.S. Fish and Wildlife Service has indicated that there are no Federally protected species known to occur in Jefferson County. Based on review by the USFWS, it appears that wetland habitat may occur within the project area.

The Missouri Department of Conservation concludes that there are no State listed plants or animals known to occur on the project site. However, overwintering bald eagles (Haliaeetus leucocephalus) may occur in the project area, as they are common winter residents in big river habitats and major lakes where they feed on fish. The pallid sturgeon is a big river fish that may range widely in the Mississippi River and Missouri River system.

Because the preferred habitat and range of the species are unknown, any project that modifies big river habitat or impacts water quality should consider the possible impact to pallid sturgeon populations.

5.0 Real Estate

5.1 DOD Ownership

In August, 1943, the War Department leased 1,517.55 acres from twenty individual property owners at an annual rate of \$5,848.00. The site was used for light weapons practice and a temporary camp area. Of the 1,517.55 acres leased, 260 acres were acquired for the rifle ranges, 35 acres for the machine gun range, and the remainder for a safety area. Funds for the acquisition were made available through Public Law 649, 77th Congress, approved 2 July 1942.

The 1,517.55 leased acres were terminated prior to 30 June 1946. The land was conveyed back to private ownership. The deeds do not obligate the government to restore the site.

5.2 Present ownership

The Jefferson Barracks Rifle Range property is currently owned by a number of private individuals and small businesses.

5.3 Significant past ownership other than DOD

No significant past ownerships were located during this investigation.

6.0 OEW/CWM site analysis

Investigation of historical records and of the site indicated that the use of conventional weapons was accomplished at the Jefferson Barracks Rifle Range.

Documents indicated that M-1 rifles and .45 cal submachine guns were fired at the site by troops from Jefferson Barracks. According to interviews conducted by the site survey team, the troops practicing at the range policed the area for spent cartridges after each practice. The research team did not locate any indication that chemical munitions were ever stored or fired at the site.

Two formerly used defense site locations were investigated for the possibility of ordnance and explosive waste. These sites were numbered by the site survey team as follows:

1. The Former Rifle Ranges. The former M-1 ranges at the Jefferson Barracks Rifle Range faced south toward a hilly area. Troops would fire at targets located in front of a berm area 1000 yards from the firing point. The berms for these two ranges have been razed and replaced with Moss Hollow Road. The rocky bluff behind the berm area still showed some disturbances from the frontal impact of the small arms ammunition being fired at it. The site survey team inspected the former berm area and the bluffs located to the south. Due to the fact that over the years many people had scavenged the berms of each range for spent projectiles, no evidence of munitions was observed by the inspection team.

2. The Former Submachine Gun Range. This site now consisted of a plowed and planted corn field. The owner of the land indicated that the range faced east at the time of use by the Army. He stated that he razed the berm and spread it throughout the field. He did not remember finding any live munitions during this process nor did he remember finding any in his field for some time. He did remember finding a small number of slugs in the berm area.

6.1 Historical summary of OEW/CWM activities

Historical documentation indicated that the Jefferson Barracks Rifle Range was used exclusively by troops from Jefferson Barracks as a rifle range and sub-machine gun range. Troops would march approximately 15 miles from Jefferson Barracks to the range and establish temporary camp areas for short periods of time. In addition to the three ranges, the site contained a 2,000 man bivouac area.

Copper jacketed .30 cal and .45 cal bullets were the only munitions known to have been used at the site. According to interviews, these munitions were trucked in and distributed by the troops from Jefferson Barracks. There was no evidence of CWM material or conventional ordnance storage at the site.

6.2 Records Review

The locations listed below were searched for records relating to OEW/CWM activities at the Jefferson Barracks Rifle Range during August and September 1994.

Notes on records reviewed follow each entry. At the National Archives and Federal Records Center, the research team examined the following record groups (RG) as they were available and as initial inquiry led the team to believe they might contain useful information. As at other repositories, the research team used finding aids and records managers to locate documents relevant to the team's research.

- RG 18 - Records of the Army Air Forces
- RG 77 - Records of the Office of the Chief of Engineers
- RG 121 - Records of the Public Buildings Service
- RG 153 - Records of the Army Adjutant General's Office
- RG 156 - Records of the Chief of Ordnance
- RG 160 - Records of the Headquarters Army Service Forces
- RG 175 - Records of the Chemical Warfare Service
- RG 269 - Records of the General Service Administration
- RG 270 - Records of the War Assets Administration
- RG 291 - Records of the Property Management and Disposal Service
- RG 336 - Records of the Chief of Transportation
- RG 338 - Records of the United States Army Commands
- RG 342 - Records of U.S. Air Force Commands and Activities
- RG 394 - Records of the U.S. Army Continental Commands
- RG 407 - Records of the Adjutant General's Office

6.2.1. National Archives, Washington, D.C.:

RG 407, Entry 31, Box 1193. This document recommends that the 6th Infantry continue to use the Arcadia Range for target practice because the site's terrain is ideal for target practice, combat firing and other training exercises.

6.2.2. National Archives, Suitland, MD:

RG 175, Box 582, Entry #3. This is a series of reports of chemical warfare activities of the Sixth Corps Area. The documents state that CWM was present and used at Jefferson Barracks during the 1920s and 1930s. According to the documents, training at Jefferson Barracks consisted of gas mask drills, the use of smoke candles and lachrimatory, the use of WP hand and rifle grenades, and firing practice with smoke screens covering the targets and tear gas being deployed along the firing line. Use of 37mm guns and stokes mortars are also mentioned.

6.2.3. Washington National Records Center, Suitland, MD:

No information was located at this facility.

6.2.4. National Archives - Central Plains Region, Kansas City, MO:

Acquisition and surplus data was located and copied.

6.2.5. Federal Records Center, Kansas City, MO:

RG 77, box 12, Accession 83-0001. This file contained acquisition papers and a map of the Jefferson Barracks Rifle range at Barnhart, MO.

6.2.6. National Personnel Records Center, St. Louis, MO:

No information was copied at this facility.

6.2.7. U.S. Army Corps of Engineers - Kansas City District, Kansas City, MO:

Property descriptions, acquisition records and disposal records were located and copied.

6.2.8. St. Louis Public Library, St. Louis, MO:

Two books, **The Story of Jefferson Barracks** and **Jefferson Barracks and the 6th Infantry**, were located and copied. The first book provides a general history of the site from its beginning through the Second World War. This book also states that soldiers stationed at Jefferson Barracks used the Arcadia Target Range from 1898 until 1943, when the Jefferson Barracks Rifle Range at Moss Hollow (Barnhart) was opened. The second book also gives a general history of the site from its origins through World War II.

6.2.9. Missouri State Historical Society, St. Louis, MO:

No information was copied at this facility.

6.2.10. Jefferson Barracks County Park, St. Louis, MO:

3 Microfilm Rolls; A2378, A2384, B2379. This series of documents state three ranges were opened at Moss Hollow in mid-August, 1943. The ranges were built to meet the needs of marksmanship training for approximately 20,000 troops and were linked with Jefferson Barracks by hiking trails and roadways. The Moss Hollow Rifle Range was used not only for marksmanship practice, but was also used for physical training and contained a bivouac area for 2000 men. In spite of the improvements which had taken place to make the ranges out of a farm, their relinquishment began on 16 March 1944, when Range #2 was closed. On 19 March 1944, Range #3 was closed, leaving the South Range at Jefferson Barracks as the only place that sub-machine gun and .22 cal rifle firing could take place. By the end of March, the use of Moss Hollow ceased and by 15 April 1944 all firing at Jefferson Barracks was concluded.

6.2.11. Air Force Historical Research Agency, Maxwell Air Force Base, Montgomery, AL:

Information located and copied at the Jefferson Barracks County Park was provided from micro-filmed material, the originals of which are located at this facility.

6.3 Summary of interviews

Both telephonic and personal interviews were conducted while gathering information for the completion of this report. The most productive interview was with Mr. Norville Krauss, the current property owner of the former rifle range. Copies of the individual conversation record sheets are assembled in chronological order and located in Appendix E.

6.4 Site Inspection

On 21 September 1994, three personnel from the St. Louis District Corps of engineers travelled to the former Jefferson Barracks Rifle Range to conduct personal interviews and a site survey. The St. Louis District personnel were Mr. Robert Tenholder and Mrs. Charlene Boecklen of PM-M and Mr. Charles Camillo of PD-A. A synopsis of their visit follows:

6.4.1. Wednesday, 21 September 1994 - The site survey team left the district office at approximately 0730 hours. They arrived at the site of the former Jefferson Barracks Rifle Range at approximately 0800 hours.

The first order of business of the team was to interview Mr. Norville Krauss, one of the owners of the land comprising the former range. Mr. Krauss informed the team members of the approximate location of the three ranges and stated that the former firing points were situated in the middle of his planted corn fields. He also informed the team that he and other farmers had razed the berms and spread the dirt evenly throughout the area. A road was constructed in the general vicinity of the berms for the two rifle ranges.

After interviewing Mr. Krauss, The inspected the area where the berms for the rifle range once stood. There was no evidence of military debris or of small arms ammunition in the area. A rocky bluff behind the berm area was also inspected by the team. Some scars caused by the impact of small arms were observed on the rocks in bluffs, but again, no evidence of live or spent munitions was discovered.

The team proceeded to the area of the machine gun range. The area was flat and plowed. The berm area and the firing points were not determined by the site inspection team. The team walked the area and found no evidence of live or spent munitions.

6.5 Air photo interpretation

6.5 Air photo interpretation

Photo analysis and land-use interpretation were performed using the following photographic source materials:

<u>Photo Date</u>	<u>Approx Scale</u>	<u>Source</u>	<u>Frame ID #s</u>
24 Sep 1966	1:20,000	ASCS	GG135,136
13 Nov 1954	1:20,000	ASCS	2M47,48

Aerial photography for this site was referenced using USGS topographic quadrangles (listed in Map Analysis section, below).

The site of the former Jefferson Barracks Rifle Range is located approximately two miles west of the City of Barnhart, Missouri in an area called Moss Hollow between two hills. Relief in the area varies up to 500 feet. Two streams and numerous other small drainages are present near the site. The area is served by an interstate highway and numerous smaller roads. A railroad track runs near the City of Barnhart.

Evidence of the Rifle Range sites is seen on the imagery from 1954. A partial berm shows from the 50m range. The general outline of the 100m range shows on the imagery. Nothing in the area of the former machine gun range can be seen on the photos from 1954.

By 1966 most of the evidence of the rifle ranges is gone. A small linear berm still exists in the area of the 50m range. No evidence of ordnance or explosive waste or disposal can be detected on any of the aerial photos in any of the areas on the site.

6.3.1 Map Analysis

The HERCULANEUM MO 1974 USGS 7.5' topographic quadrangle was used in analysis of the site.

The approximate geographic coordinates of the J.B. Rifle Range are:

38° 20' N Latitude
90° 27' W Longitude

The former J.B. Rifle Range was located two miles west of the City of Barnhart, MO. The site is located in a stream valley. Relief in this area of ridges and valleys varies on the order of 250'. Although houses and farm buildings are shown in the area, no evidence of ordnance or explosive waste disposal or storage is shown on the quadrangle.

7.0 Evaluation of ordnance contamination

7.1 CWM contamination

Investigation of historical records indicate that no type of chemical warfare munitions, agents, or materials were stored or used at the Jefferson Barracks Rifle Range.

7.2 Conventional contamination

Investigation of historical records indicate that only small arms ammunition was used at the Jefferson Barracks Rifle Range. The possibility of some small arms ammunition (.30 cal. and .45 cal.) being found at the site still exists. The area was thoroughly policed for spent cartridges by troops using the range, however, a small number of slugs was uncovered by the farmers who razed and leveled the berms. Over the years, the site has been planted and plowed extensively, creating the possibility that some spent munitions were buried or uncovered during the process.

Historical records indicate that the site area did not contain any munitions storage areas, as the small arms used at the range were brought in by truck on a day-to-day basis.

8.0 Conclusions and recommendations

8.1 Conclusions

It is concluded that the Jefferson Barracks Rifle Range has no ordnance or explosive waste remaining on its property. The site area has been plowed and planted extensively by farmers since its use by the DoD. With the exception of a small number of .30 cal. slugs uncovered when the berms were razed and leveled, there have been no reports of ordnance and explosive waste ever being found at the site. In addition, the site survey team found no evidence of any type of military debris being present at the former rifle range.

The Risk Assessment probability quotient is a "IMPROBABLE". The Risk Assessment severity quotient is a "NEGLIBLE". The overall Risk Assessment code is a "5".

8.2 Recommendation

It is recommended that any further investigation into ordnance and explosive waste at the Jefferson Barracks Rifle Range, Jefferson County, Missouri be terminated at this time.

APPENDIX A

REFERENCES

Ordnance and Explosive Waste
Chemical Warfare Material
Archives Search Report
for the former
Jefferson Barracks Rifle Range
Barnhart, Missouri
Project Number - B07M0014500

APPENDIX A

REFERENCES

- Thornbury, William D.
1965 Regional Geomorphology of the United States.
Department of Geology Indiana University, John
Wiley and Sons, Inc., New York.
- Imes, J.L.
1988 Geohydrology and Hydrochemistry of the Ozark
Plateaus Aquifer System. Regional Aquifer Systems
of the United States, Aquifers of the Midwestern
Area, AWRA Monograph Series No. 13

APPENDIX B

ACRONYMS

Ordnance and Explosive Waste
Chemical Warfare Material
Archives Search Report
for the former
Jefferson Barracks Rifle Range
Barnhart, Missouri
Project Number - B07MO014500

APPENDIX B

ACRONYMS

ASR	Archive Search Report
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CEHND	Corps of Engineers, Huntsville Division
CWM	Chemical Warfare Material
CWS	Chemical Warfare Service
DERA	Defense Environmental Restoration Account
DERP	Defense Environmental Restoration Program
DOD	Department of Defense
EOD	Explosives Ordnance Disposal
EODCC	Explosives Ordnance Disposal Command and Control
EPA	Environmental Protection Agency
ERDA	Environmental Restoration Defense Account
FUDS	Formerly Used Defense Sites
HTW	Hazardous and Toxic Waste
INPR	Inventory Project Report
IRP	Installation Restoration Program
MCX	Mandatory Center of Expertise
NCP	National Contingency Plan
NOAA	National Oceanographic and Atmospheric Administration
OEW	Ordnance and Explosive Waste
RAC	Risk Assessment Code
RG	Record Group
SARA	Superfund Amendments and Reauthorization Act
USACE	U.S. Army Corps of Engineers
USAEDH	U.S. Army Engineer Division, Huntsville, AL
WRNC	Washington National Records Center

APPENDIX C

REPORTS/STUDIES/LETTERS/MEMORANDUMS

APPENDIX C

REPORTS/STUDIES/LETTERS/MEMORANDUMS

- C-1 Extract, Administrative Orders for Jefferson Barracks, 1944
- C-2 Extract, History of Jefferson Barracks, 1946.
- C-3 Correspondence, Jefferson Barracks Planning & Appraisal Section, 5 October 1943, subj: Acquisition of Land - Rifle Range for Jefferson Barracks
- C-4 Archive Record Search Log, National Personnel Record Center, St. Louis, MO, National Archives Record Administration, Military Reference Branch, Washington, DC, National Archives Record Administration, Suitland, MD and National Archives Downtown Facility, Washington, DC
- C-5 Site Survey Team Safety Briefing Sheet
- C-6 U.S. EPA, Region 7, list of toxic waste generators

APPENDIX C-1

Extract, Administrative Orders for Jefferson Barracks, 1944

THIS PAGE IS UNCLASSIFIED

(1) Training

(a) Training

(b) Training

(c) Training

(d) Training

(e) Training

(f) Training

(g) Training

(h) Training

(i) Training

(j) Training

(k) Training

(l) Training

(m) Training

(n) Training

APPENDIX C-2

Extract, History of Jefferson Barracks, 1946

CONFIDENTIAL

on 19 March when Range Number 2 was closed and its personnel transferred to Range Number 1. On 16 March, Range Number 3 was closed; thereafter all sub-machine gun and .22 cal. rifle firing took place on the South Range. By the end of March use of Moss Hollow virtually ceased and by 15 April all firing at Jefferson Barracks was concluded. The Ordnance Office was flooded with material as firearms were turned in by the training units. On 2 March, 1500 M-3 sub-machine guns had been received to replace the Thompson type, but before they could be distributed, the evacuation plans were released.

Evacuation of other training facilities followed a similar plan as their need ceased. The Bivouac Department continued to function to 12 April. Although, the Camouflage Unit presented few shows in its mock village, training had ceased and dismantling of parts of its equipment had begun. The Physical Training Department abandoned the Field House as it might be used for storing records, but continued to super-

- 1 See: History, 707th Training Group, JB, 1 March - 31 March 1944, p 9.
- (1) 2 Administrative Order No. 1, and supplements, Hq JB, 19 March - 9 April 1944: Evacuation of JB, basic plan.
- (13) 3 History, Post Ordnance Office, JB, 1 March - 31 March 1944, pp 10 and 12.
- (5Y) 4 Letter, Post S-3 Officer, JB, to CO JB, 29 March 1944: Evacuation of Post S-3 Section; cited in History, Post S-3 Office, JB, 1 March - 31 March 1944.

CONFIDENTIAL

APPENDIX C-3

**Correspondence, Jefferson Barracks Planning & Appraisal Section,
5 October 1943, subj: Acquisition of Land - Rifle Range for Jefferson
Barracks**

CE 601.1 JEFFERSON BARRACKS, MO. --
SPELR Rifle Range.

SUBJECT: Acquisition of Land - Rifle Range for Jefferson Barracks,
Missouri.

FROM : Planning & Appraisal Section TO: (1) Condemnation Section
(2) Purchase Section
(3) Leasing Section

1. Directive dated 11 June 1943 authorized the acquisition in fee of approximately 295 acres and a leasehold interest in approximately 1211 acres to provide a rifle range at the Jefferson Barracks Airfield, Missouri, at an estimated cost of \$47,000.

2. Based upon the recommendation of the Division Engineer in first indorsement attached dated 31 August 1943, a military necessity no longer exists for the acquisition in fee of 295 acres, inasmuch as the entire area can be acquired by lease by payment of reasonable damage caused by actual construction.

3. The estimated cost of leasehold interest on the entire 1506 acres is \$12,535 for the first year. The annual rental for the second year and each year thereafter will be \$5,400.

4. The attached Memoranda indicate that there is no objection by the Condemnation Section nor the Purchase Section to the amendment of this directive.

5. The Directive dated 11 June 1943 is hereby amended in accordance therewith and it is requested that the necessary action be taken to acquire leasehold interest in the subject 295 acres.

/s/ O'Brien,
O'BRIEN.

Attached:

Memo 9/29/43.

Memo 9/25/43.

Ltr 8/18/43 w/1 Ind.

Est. Leasing Cost.

Perimeter Description.

Map.

MISSOURI RIVER DIVISION HISTORICAL FILE SUMMARY
(Land Acquisition and Disposals Subsequent to 1 July 1940)

RESERVATION NAME:

Jefferson Barracks Rifle Range (Moss Hollow), Missouri

OFFICIALLY DESIGNATED BY:

Army Ground Forces

LOCATION:

In Jefferson County, 2 miles west of Barnhart, Missouri

TYPE:

Rifle Range for Jefferson Barracks

LAND OWNERSHIP AND COST DATA

ACQUISITION ACTIONS:

Exhibit "A"

DISPOSAL ACTIONS

Exhibit "D"

NET AREA:

1,517.55 acres, Leased, Total Area Acquired
1,517.55 acres, Leases terminated

-0-

GROSS COST:

ANNUAL RENTAL
\$5,484.00

JURISDICTION:

RELOCATIONS:

FINAL PROJECT MAP:

See Final Audited Project Map File

MISCELLANEOUS PAPERS:

REMARKS:

7 April 1987

PROJECT: Jefferson Barracks Rifle Range, Barnhart, MO
 B07M0014500

The Jefferson Barracks Rifle Range contained 1,517.55 acres. The land was leased in 1943. The leases were terminated in 1946.

E. W. Dierks and Norville Kraus were very helpful in providing information on the former rifle range. Mr. Dierks stated that he had removed some structures from his farm that the Government had built. Mr. Kraus informed me that a county road was moved onto his land to accommodate facilities for the range. After the leases were terminated, Mr. Kraus had to move the road back to the original location at his own expense. Maps providing ownership information are attached to this report. The rifle range is approximately fourteen miles south of St. Louis and two miles west of Barnhart, Missouri.

Please notify Elton Pfaff (Ext. 5120) when your site inspection has been completed, and RE-AR will provide the necessary real estate information to be inserted in the Finding of Fact.

APPENDIX C-4

**Archive Record Search Log,
National Personnel Record Center, St. Louis, MO,
National Archives Record Administration, Military Reference Branch,
Washington, DC,
National Archives Record Administration, Suitland, MD
and National Archives Downtown Facility, Washington, DC**

ARCHIVE LOCATION:
NATIONAL ARCHIVES - CENTRAL PLAINS REGION
KANSAS CITY, MO

DATE: August 23-24, 1994

[illegible]

ARCHIVE LOCATION:

NATIONAL ARCHIVES - SUTLAND BRANCH

DATE: AUGUST 29-31, 1944

Subject Site	RG	Box	Entry #	Folder #	Descrip	Init
ARCAZTA TARGET RANG	175	27	2		NOT LISTED	CAC
VICHY AAF	175	517	2		NOT LISTED	CAC
JEFFERSON BARRACKS	175	270	2		INDEX BRIEFS	CAC
J.B. RIFLE RANGE	175	37	2		NOT LISTED	CAC
MOSS HOLLOW	175	314	2		NOT LISTED	CAC
SEALTA AAF	175	458	2		INDEX BRIEFS	CAC
JEFFERSON BARRACKS	175	582	3		CWM AT J.B. & ARCAZTA	CAC
6TH INFANTRY	175	263	2		MANEUVERS	CAC
JEFFERSON BARRACKS	175	583	3		CWM AT J.B.	CAC
JEFFERSON BARRACKS	175	350	1	400.312-193	GAS I.D. SET	CAC
JEFFERSON BARRACKS	175	353	1	400.312-890	CWS REQUISITION	CAC
JEFFERSON BARRACKS	175	358	1	400.312-1653	NOT LISTED	CAC
JEFFERSON BARRACKS	175	21	1	022/65	NOT LISTED	CAC
JEFFERSON BARRACKS	175	290	1	470.72-3432	GAS MASK REQUISITION	CAC
JEFFERSON BARRACKS	175	20	1	022/69	NOT LISTED	CAC
JEFFERSON BARRACKS	175	32	1	113/257	120 CN CAPSULES	CAC
JEFFERSON BARRACKS	175	46	1	352/440	140 CN CAPSULES	CAC
JEFFERSON BARRACKS	175	237	1	470.6-3416	LECTURES ON CWM	CAC
JEFFERSON BARRACKS	175	467	1	113/423	CN CAPSULES	CAC
VICHY AAF	77	268	393		NOT LISTED	CAC
ARCAZTA TARGET RANG	77	3	393		NOT LISTED	CAC
JEFFERSON BARRACKS	77	102	393		PHOTOS OF ARCAZTA/J.B.	CAC
ARCAZTA TARGET RANG	77	1	391		NOT LISTED	CAC
JEFFERSON BARRACKS	77	1	391		INDEX BRIEF	CAC
VICHY AAF	77	2	391		INDEX BRIEF	CAC
JEFFERSON BARRACKS	77	103	398		CONST. COMP. REPORT	CAC
VICHY AAF	77	94	391		" "	CAC

ARCHIVE LOCATION:

NATIONAL ARCHIVES - SUITLAND BRANCH
SUITLAND, MD

DATE: SEPTEMBER 6-7, 1994

Subject Site	RG	Box	Entry #	Folder #	Descrip	Init
JEFFERSON BARRACKS	394	1	166		2 ND Army Mobilization Plan	CAC
	394	2	166		" "	CAC
	394	3	166		" "	CAC
	394	4	166		" "	CAC
	394	5	166		" "	CAC
	394	6	166		" "	CAC
	394	7	166		" "	CAC
	394	8	166		FT. SHERIDAN	CAC
	394	9	166		6 TH CA MOBILIZATION	CAC
	394	10	166		" "	CAC
	394	11	166		" "	CAC
	394	12	166		" "	CAC
	394	13	166		" "	CAC
	394	14	166		6 TH CA Ammo/Grades	CAC
	407	6922	427		6 TH INFANTRY HIST.	CAC
	407	7017	427		63 INF REG. HIST.	CAC
	407	6975	427		6 TH INF TACTICAL MANEUVERS	CAC
	407	6976	427		" "	CAC
	407	6977	427		" "	CAC
	407	6978	427		" "	CAC
	407	6979	427		" "	CAC
	407	6980	427		" "	CAC
	407	6990	427		16 TH COMBAT ENGINEERS	CAC
	407	6993-94	427		1 ST FIELD ARTILLERY	CAC
	407	6996	427		51 ST FIELD ARTILLERY	CAC
	407	6998	427		53 RD FIELD ARTILLERY	CAC
↓	407	7004	427		1 ST INF. REGIMENT	CAC

I acknowledge receipt of and responsibility IAW AFR 20-14 for the items described below and will return them by the return date indicated.

ISSUED TO: SIGNATURE <i>John Dahl</i>		DUTY PHONE	ISSUED BY <i>Hubb</i>	
ISSUED TO: NAME, GRADE, ORGN (Type or print) <i>John Dahl</i>		ORGN ACCT NO.	DATE OF ISSUE <i>12 Aug 94</i>	RETURN DATE
STOCK NUMBER	DESCRIPTION OF ITEMS	U/I	QNTY	
<i>383.1-103#30</i>	<i>Vichy Army AIRFIELD</i>	<i>110</i>	<i>2BX</i>	
<i>K239, 716248-10</i>	<i>COCHRAN</i>	<i>.28</i>	<i>34 1BX</i>	
<i>K110.5032-1(NC)</i>	<i>Sedalia AFB</i>	<i>66</i>	<i>1BX</i>	
<i>280.77</i>	<i>Birmingham Army Air Base</i>	<i>25</i>	<i>2BX</i>	
	<i>↳ Just a couple boxes if There are</i>			
	<i>too many</i>			

APPENDIX C-5

Site Survey Team Safety Briefing Sheet

SITE SPECIFIC SAFETY AND HEALTH PLAN (SSHP)

OEW/CWM Archives Search Site Inspection Visit

Jefferson Barracks Rifle Range

Site #B07MO014500

1. REFERENCES:

- a. Safety Manual, CELMS-PM-M, 16 Sep 93 w/ Ch1.
- b. SOP for Reporting Ordnance and Unexploded Ordnance (UXO), CELMS-PM-M, 15 Nov 93.

2. GENERAL: This plan prescribes the safety and health requirements for team activities and operations conducted to determine the presence of ordnance and explosive waste and /or chemical warfare materials at the specified site.

- a. The Safety Officer has final authority on all matters relating to safety. The safety rules will be followed at all times. Any member of the team may stop operations if they observe a situation or activity which poses a potential hazard to any individual or to the operation. All actions must comply with the common sense rule!

- b. All team members will be aware of the local emergency numbers and the location of the nearest telephone.

3. MISSION: Reconnoiter, document, and photograph areas on Jefferson Barracks Rifle Range suspected to be contaminated with UXO and/or toxic chemical munitions.

4. SAFETY PRECAUTIONS: All team members will stay within sight of each other while on site. A first aid kit will be on hand. The following three basic safety rules apply at all times:

- a. Rule 1 - Do not touch or pick up anything at the site.
- b. Rule 2 - Do not step anywhere you cannot see where you place your foot.
- c. Rule 3 - There will be no eating or smoking at the site. Hands will be washed after the survey and prior to eating. Drinking fluids should be done during periodic breaks.

5. SITE COMMUNICATIONS: The primary means of communicating with other team members will be by voice. Team members will always remain within sight of each other. Cellular telephones should be carried to facilitate and expedite calling for emergency medical services.

6. NATURAL HAZARDS: normal terrain hazards

7. ORDNANCE HAZARDS: conventional

8. EMERGENCY PROCEDURES: First aid will be rendered for any injuries. In the event of a detonation, everyone should freeze until the situation can be assessed by the team leader. Unnecessary injuries can be avoided by not panicking and planning a logical course of action, which may include retracing your steps out of an impact area. Emergency medical services will be contacted by the most expeditious means available.

9. SAFETY STATEMENT: Safety is everyone's business. No unnecessary risks will be taken to obtain photos or other data. Team members are responsible for notifying the project Manager or safety Officer of any physical conditions that may impede or prevent their accomplishment of the mission. An example is allergic reactions to bee stings.

Important Phone Numbers

Emergency medical service:	911
Law enforcement agency:	314-942-2226
Huntsville Safety:	(205) 955-4968

SSHP reviewed by:

GEORGE SCOW
[Signature]

Encls

1. Safety Briefing Attendance
2. Safety gear

SITE SURVEY SAFETY BRIEFING

PPE

Site Hazards

_____ Work Clothing	_____ OEW
_____ Gloves	_____ CSM
_____ Hardhat	_____ HTW
_____ Hearing protection	_____ Slips, falls, trips
_____ Safety shoes	_____ Wildlife
_____ Safety glasses	_____ Vegetation

Weather Precautions

_____ Cold/Heat
_____ Severe Weather

Safety Briefing Attendance

All team members and any accompanying personnel
will be briefed and sign this form:

Print name and organization

Signature

ROBERT J. TENHOLDER

CELMS-PM-M

CHARLES CAMILLO

CELMS-PD-A

CHARLENE BOECKLEN

CELMS-PM

DANIEL S. AHERN

CEMRK-ED-TD

MANDATORY MINIMUM SAFETY GEAR

First aid kit (individual)	<u>✓</u>
Survival kit	<u>✓</u>
Fire starter	<u>✓</u>
Space blanket	<u>✓</u>
Whistle	<u>✓</u>
Mirror	<u>✓</u>
Cellular phone	<u>✓</u>
Flash light	<u>✓</u>
Survey tape	<u>✓</u>
Canteen	<u>✓</u>

APPENDIX C-6

U.S. EPA, Region 7, list of toxic waste generators

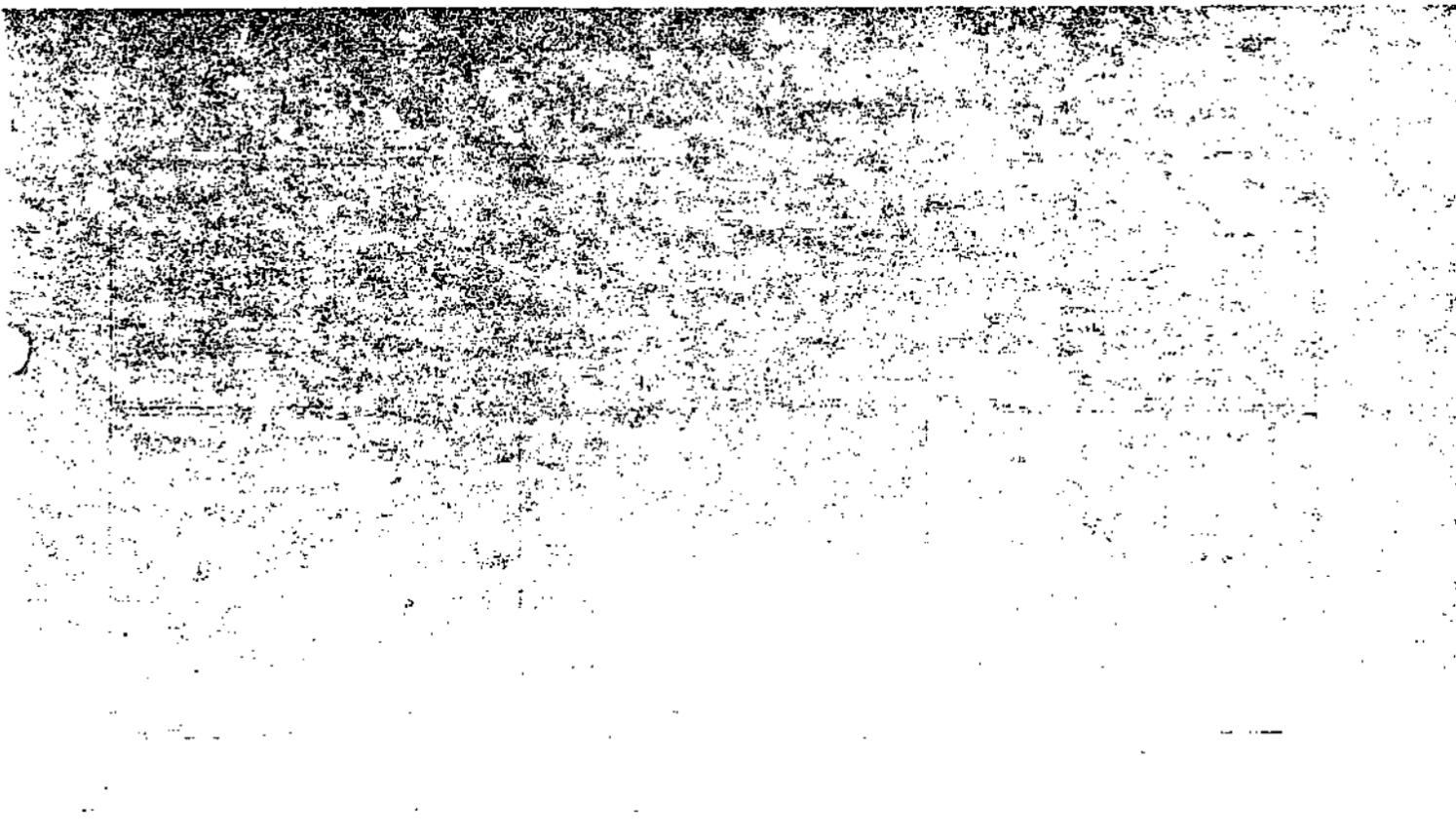
REPORT ID:
R7FIAALL

PAGE: 6
DATE: 09/06/94

Region VII Merge Database
GENERATORS, TSD AND TRANSPORTERS OF HAZARDOUS WASTE
BY COUNTY

HANDLER ID	HANDLER NAME & ADDRESS	CONTACT	REPORT CODES		
			GENER	TSD	TRANS
MOD981721418	TWIN CITY AUTO BODY 2450 N TRUMAN BLVD, CRYSTAL CITY, MO	K. DRINEN OWNER 314/937-7300 63019 JEFFERSON COUNTY		SQG	
MOD985772086	TWIN CITY TOYOTA 1195 E GANNON DR, FESTUS, MO	B. DICKEY SERV MANAGER 314/933-0555 63028 JEFFERSON COUNTY		SQG	
MOD985798651	UNITED PARCEL SVC 20 GOODWIN, CRYSTAL CITY, MO	J. BALL MGR 314/934-0130 63019 JEFFERSON COUNTY		CESQG	
MOD985807684	VALVOLINE INSTANT OIL CHANGE 922 JEFFCO BLVD, ARNOLD, MO	T. GERRING ENV MGR 606/264-7697 63010 JEFFERSON COUNTY		SQG	
MO0000592634	VALVOLINE INSTANT OIL CHANGE 635 N CREEK DR, FESTUS, MO	L. KASTNER ENV ENGR 606/357-2271 63028 JEFFERSON COUNTY		CESQG	
MOD149970972	WAL MART STORES INC 1150 GANNON DR, FESTUS, MO	R. FALGE 314/933-0043 63028 JEFFERSON COUNTY		SQG	
MOD108745829	WHITEHEAD AUTO BODY 7276 HWY 61-67, BARNHART, MO	C. FLUEGGE 314/464-0033 63012 JEFFERSON COUNTY		SQG	
MOD985818772	WINNING EQUIPMENT CO 1225 MCNUTT RD, HERCULANEUM, MO	T. FRIGERIO SVC MANAGER 314/464-9500 63048 JEFFERSON COUNTY		CESQG	

Number of handlers for JEFFERSON county: 96



APPENDIX D

HISTORICAL PHOTOGRAPHS

NOT USED

APPENDIX E

INTERVIEWS

Ordnance and Explosive Waste
 Chemical Warfare Material
 Archives Search Report
 for the former
 Jefferson Barracks Rifle Range
 Barnhart, Missouri
 Project Number - B07MO014500

APPENDIX E

INTERVIEWS

<u>Individual Contacted</u>	<u>Position/ Organization</u>	<u>Date Interviewed</u>
Mr. Pat McManus	Facilities Section, Missouri National Guard	5 Aug 94
Mr. Jack Goethe	Historian, Jefferson Barracks County Park	5 Aug 94
Mr. Mark Collbaum	History Director, Jefferson Barracks County Park	5 Aug 94
Mr. Tony Fusco	Local Historian, Jefferson Barracks	30 Aug 94
H.W. Barbee	Secretary, 6th Infantry, POC	26 Aug 94
Mr. Mark Korreston	Archivist, NARA, Kansas City, MO	5 Aug 94
Mr. Dan Ahern	Army Corps of Engineers, Kansas City District	5 Aug 94
Mr. Mark Collbaum	History Director, Jefferson Barracks County Park	12 Aug 94
MSG Sipes	63rd EOD, Ft. Leonardwood Missouri	31 Aug 94
Various Members	Veterans of the 6th Infantry Association	14 Sep 94

TELEPHONE OR VERBAL CONVERSATION RECORD

DATE 5 August 1994

For use of this form, see AR340-15; the proponent agency is the Adjutant General's Office.

SUBJECT OF CONVERSATION Jefferson Barracks, Missouri Jefferson Barracks Rifle Range, Barnhart, Missouri Jefferson Barracks Target Range, Arcadia, Missouri		
INCOMING CALL		
PERSON CALLING	ADDRESS	PHONE NUMBER AND EXTENSION
PERSON CALLED	OFFICE	PHONE NUMBER AND EXTENSION
OUTGOING CALL		
PERSON CALLING Bob Tenholder	ADDRESS CELMS-PM-M	PHONE NUMBER AND EXTENSION 314-331-8786
PERSON CALLED Mr. Pat McManus	OFFICE Facilities Section, Missouri National Guard	PHONE NUMBER AND EXTENSION 314-526-9553

SUMMARY OF CONVERSATION:

Mr. McManus was contacted while gathering information concerning the Jefferson Barracks sites. Mr. McManus has been with the MO National Guard for over 20 years. He does not remember any historical files concerning Jefferson Barracks being at his office. He believes he might have some records concerning the Arcadia Range, but he's not sure where since he moved to his new office. He will look around and see if he can find them and call me back.

TELEPHONE OR VERBAL CONVERSATION RECORD

DATE 5 August 1994

For use of this form, see AR340-15; the proponent agency is the Adjutant General's Office.

SUBJECT OF CONVERSATION Jefferson Barracks, Missouri Jefferson Barracks Rifle Range, Barnhart, Missouri Jefferson Barracks Target Range, Arcadia, Missouri		
INCOMING CALL		
PERSON CALLING	ADDRESS	PHONE NUMBER AND EXTENSION
PERSON CALLED	OFFICE	PHONE NUMBER AND EXTENSION
OUTGOING CALL		
PERSON CALLING	ADDRESS	PHONE NUMBER AND EXTENSION
Bob Tenholder	CELMS-PM-M	314-331-8786
PERSON CALLED	OFFICE	PHONE NUMBER AND EXTENSION
Mr. Jack Goethe	Historian, Jefferson Barracks County Park	314-544-5714

SUMMARY OF CONVERSATION:

Mr. Goethe was contacted while gathering information concerning munitions being found at Jefferson Barracks and to set up a time when the researchers could review the Park Departments records. Mr. Goethe had previously been a Park Ranger at The park and was very familiar with munitions being found there. He related stories he knew about munitions being found at the park. He said .50 caliber rounds were mostly found at the park. He had heard off hand grenades being found and once someone brought in rusted parts of what he thought was a land mine.

He said recently some divers had recovered the wheels from a cannon that was disposed of in the river. They had also found the cannon, but were unable to retrieve it. The cannon site was marked by the divers.

He also said that during the construction of the new pavilion a passageway was discovered between the ordnance magazines. The passage way was partially investigated.

He recommended I contact Mr. Mark Collbaum, the Jefferson Barracks Historical Director, 314-544-4154. Mr. Collbaum would be the that would allow access to the museum files.

TELEPHONE OR VERBAL CONVERSATION RECORD

DATE 5 August 1994

For use of this form, see AR340-15; the proponent agency is the Adjutant General's Office.

SUBJECT OF CONVERSATION Jefferson Barracks, Missouri Jefferson Barracks Rifle Range, Barnhart, Missouri Jefferson Barracks Target Range, Arcadia, Missouri		
INCOMING CALL		
PERSON CALLING	ADDRESS	PHONE NUMBER AND EXTENSION
PERSON CALLED	OFFICE	PHONE NUMBER AND EXTENSION
OUTGOING CALL		
PERSON CALLING Bob Tenholder	ADDRESS CELMS-PM-M	PHONE NUMBER AND EXTENSION 314-331-8786
PERSON CALLED Mr. Mark Collbaum	OFFICE History Director, Jefferson Barracks County Park	PHONE NUMBER AND EXTENSION 314-544-4154

SUMMARY OF CONVERSATION:

Mr. Collbaum was contacted based on the recommendation of Mr. Jack Goethe. Mr. Collbaum has been at Jefferson Barracks for 5½ years. He has extensive collections of records concerning JB. He has 38 reels of microfilm which has not yet all been reviewed. He knows he has some information on the rifle range and possibly some on the target range.

Mr. Collbaum said he had recently completed the environmental assessment for the rifle range because a highway was to be constructed through the property. In his investigation all he had noticed being fired there were M-1 rifles and submachine guns. He has heard that small arms bullets have been found there frequently.

Concerning the target range he has only heard a little about that site. He does have correspondence which indicates the 6th Infantry Division used the site. They apparently marched there from JB and stayed for 10-14 days.

He also said the 6th Infantry used Lone Elk Park in west St. Louis County for training exercises.

I asked Mr. Collbaum about the passage way found during the construction of the new pavilion in the park. He said the passage appeared to have been a natural cave which was widened to allow passage of personnel. They did not locate the entrances of the passage ways.

A meeting was set up for 1300 hours, Thursday, 11 August 1994 for the St. Louis District researchers to review Mr. Collbaum's records.

TELEPHONE OR VERBAL CONVERSATION RECORD

DATE 5-Aug-1994

For use of this form, see AR340-15; the proponent agency is the Adjutant General's Office.

SUBJECT OF CONVERSATION Jefferson Barracks Jefferson Barracks Target Range Jefferson Barracks Rifle Range Vichy Army Air Field		
INCOMING CALL		
PERSON CALLING	ADDRESS	PHONE NUMBER AND EXTENSION
PERSON CALLED	OFFICE	PHONE NUMBER AND EXTENSION
OUTGOING CALL		
PERSON CALLING Charles Camillo	ADDRESS PD-A	PHONE NUMBER AND EXTENSION 314-331-8795
PERSON CALLED Mark Korreston	OFFICE NARA, Central Plains Region 2312 East Bannister Road Kansas City, MO 64131	PHONE NUMBER AND EXTENSION 816-926-6272

SUMMARY OF CONVERSATION: Contacted Mr. Korreston concerning records held at his facility. He informed me that there were numerous records concerning Jefferson Barracks and its associated sites. There was only a small file on Vichy Army Air Field. He will be expecting a visit from me on August 22.

TELEPHONE OR VERBAL CONVERSATION RECORD

DATE 5-Aug-1994

For use of this form, see AR340-15; the proponent agency is the Adjutant General's Office.

SUBJECT OF CONVERSATION Jefferson Barracks Jefferson Barracks Rifle Range Jefferson Barracks Target Range Vichy Army Air Field		
INCOMING CALL		
PERSON CALLING	ADDRESS	PHONE NUMBER AND EXTENSION
PERSON CALLED	OFFICE	PHONE NUMBER AND EXTENSION
OUTGOING CALL		
PERSON CALLING Charles Camillo	ADDRESS PD-A	PHONE NUMBER AND EXTENSION 314-331-8795
PERSON CALLED Dan Ahern	OFFICE U.S. Army Corps of Engineers Kansas City District	PHONE NUMBER AND EXTENSION 816-426-2608 ext.3010

SUMMARY OF CONVERSATION: Contacted Mr. Ahern concerning records held at his office on the aforementioned sites. Mr. Ahern welcomed me to look at the documents and other documents held in records storage. He will be expecting me on August 25.

TELEPHONE OR VERBAL CONVERSATION RECORD

DATE 12-Aug-1994

For use of this form, see AR340-15; the proponent agency is the Adjutant General's Office.

SUBJECT OF CONVERSATION Jefferson Barracks Jefferson Barracks Rifle Range		
INCOMING CALL		
PERSON CALLING	ADDRESS	PHONE NUMBER AND EXTENSION
PERSON CALLED	OFFICE	PHONE NUMBER AND EXTENSION
OUTGOING CALL		
PERSON CALLING Charles Camillo	ADDRESS PD-A	PHONE NUMBER AND EXTENSION 314-331-8795
PERSON CALLED Marc Kollbaum	OFFICE History Director Jefferson Barracks County Park	PHONE NUMBER AND EXTENSION 314-544-4154

SUMMARY OF CONVERSATION: Mr. Kollbaum was contacted while gathering information on this quarter's sites. Mr. Kollbaum stated that the target range at Jefferson Barracks was located on the southern portion of the old base, probably on what is now property run by the Veterans Administration. To the best of his knowledge, only pistols and M1 carbines were used at the range. He also stated that he was familiar with the rifle range in Barnhart, Missouri. To the best of his knowledge, only M1 carbines (.30 cal.) and Thomson sub-machine guns (.45 cal.) were used at the site.

Mr. Kollbaum said that Jefferson Barracks was called the St. Louis Arsenal for a brief time, and contained a U.S. Naval Magazine in 1892. He also informed me that the military used to dump truckload after truckload of munitions in the Mississippi River. He suggested that the site survey team search the beach area of the river from the Jefferson Barracks bridge from the south and following a northerly path for approximately 1000 yards. This area, he said, contains many munitions and relics from the period that occasionally wash up on the beach. He even recalled that a 30mm anti-aircraft shell had washed up on the beach.

Concerning chemical warfare materials, Mr. Kollbaum stated that a chemical warfare squadron was located at the site during World War II. Mr. Kollbaum said the I could look through the 38 rolls of microfilm and other records that I wished to look at. He also suggested that I contact Tony Fusco, Jack Grothe and John Riley as they might have additional information on the site. He also gave me the POC for the 6th Infantry, Mr. H.W. Barbee (314-843-3429).

TELEPHONE OR VERBAL CONVERSATION RECORD

DATE 26 August 1994

For use of this form, see AR340-15; the proponent agency is the Adjutant General's Office.

SUBJECT OF CONVERSATION Jefferson Barracks, Missouri Jefferson Barracks Rifle Range, Barnhart, Missouri Jefferson Barracks Target Range, Arcadia, Missouri		
INCOMING CALL		
PERSON CALLING 	ADDRESS 	PHONE NUMBER AND EXTENSION
PERSON CALLED 	OFFICE 	PHONE NUMBER AND EXTENSION
OUTGOING CALL		
PERSON CALLING Bob Tenholder	ADDRESS CELMS-PM-M	PHONE NUMBER AND EXTENSION 314-331-8786
PERSON CALLED Mr. Tony Fusco	OFFICE Local Historian, Jefferson Barracks	PHONE NUMBER AND EXTENSION 314-892-0254

SUMMARY OF CONVERSATION:

Mr. Fusco was interviewed at the Air National Guard Base Engineers facility. Mr. Fusco has researched the history of Jefferson Barracks extensively and has written a book on the subject. He has heard of rifle and machine gun parts, hand grenades and small arms ammunition being found along the river front at Jefferson Barracks. He thought these items were thrown in the river by the military somewhere in the vicinity of where Street Industries is now located. There had been Quartermaster warehouses there previously and he thought that was where the waste came from. Over the years the river has carried these items downstream. The items have gotten caught in the fissures in the rock and are revealed at low river stages. Mr. Fusco has heard of items showing up as far as the barge terminal south of the JB bridge. He stated that anything might be found down along the river. He knows of china, silverware, mule shoes, carriage parts, a cannon, wagon wheels, medicine vials, and building debris all being down there.

Mr. Fusco recommended I contact the 6th Infantry Association meetings. Their members meet on either the first or second Wednesday during the day at the Black Hawk shelter in the St. Louis County Park. If I would call Mr. Fusco a call at home he could provide the exact time.

I asked Mr. Fusco if he knew of any ranges located at Jefferson Barracks. He only knew of the rifle and the pistol range which is located on cemetery property. Mr. Fusco is friends with the workers at the cemetery and he has never heard of anyone finding any type of military debris while excavating the graves.

Mr. Fusco did say the wooded area in the southwest section of the post, which is now cemetery property, had been where the 6th Infantry had done some of their field training. He was not certain exactly what he felt that the members of the 6th Infantry Association could describe what was done there.

Mr. Fusco has never heard the rumors that trucks full of some type of debris were buried in the old sink holes on the post. He said it would not surprise him if it did happen, but as far as he knew everything disposed of was thrown in the river.

Mr. Fusco was not familiar with the training that went on at Arcadia, MO. He had some documents which talked about the 6th Inf. training there, but he never investigated it further. He also knew that small arms training had been accomplished at the rifle range at Barnhart, MO. Mr. Fusco invited me to review the records he has collected at his home.

TELEPHONE OR VERBAL CONVERSATION RECORD**26 August 1994**

For use of this form, see AR340-15, the proponent agency is the Adjutant General's Office.

SUBJECT OF CONVERSATION Jefferson Barracks Arcadia Target Range Moss Hollow Target Range		
INCOMING CALL		
PERSON CALLING	ADDRESS	PHONE NUMBER AND EXTENSION
PERSON CALLED	OFFICE	PHONE NUMBER AND EXTENSION
OUTGOING CALL		
PERSON CALLING Charles Camillo	ADDRESS PD-A	PHONE NUMBER AND EXTENSION 314-331-8789
PERSON CALLED H. W. Barbee	OFFICE Secretary 6th Infantry, POC	PHONE NUMBER AND EXTENSION 314-843-3429

SUMMARY OF CONVERSATION: Called Mr. Barbee to inquire about the 6th Infantry Group's next meeting. Mr. Barbee stated that the next meeting was to take place on Wednesday, September 14. He welcomed me to come to the meeting and interview the veterans in attendance. He stated that there would be two dozen or so individuals.

TELEPHONE OR VERBAL CONVERSATION RECORD

DATE 31 August 1994

For use of this form, see AR340-15; the proponent agency is the Adjutant General's Office.

SUBJECT OF CONVERSATION Jefferson Barracks, Missouri Jefferson Barracks Rifle Range, Barnhart, Missouri Jefferson Barracks Target Range, Arcadia, Missouri Vichy AAF, Missouri		
INCOMING CALL		
PERSON CALLING	ADDRESS	PHONE NUMBER AND EXTENSION
PERSON CALLED	OFFICE	PHONE NUMBER AND EXTENSION
OUTGOING CALL		
PERSON CALLING Bob Tenholder	ADDRESS CELMS-PM-M	PHONE NUMBER AND EXTENSION 314-331-8786
PERSON CALLED MSG Sipes	OFFICE 63rd EOD Ft. Leonard Wood, MO	PHONE NUMBER AND EXTENSION 314-596-2818

SUMMARY OF CONVERSATION:

MSG Sipes was contacted while gathering information concerning the Jefferson Barracks and Vichy AAF sites. MSG Sipes has been assigned to Ft. Leonard Wood for seven years. He does not remember any of his personnel ever visiting any of the above noted sites in response to munitions being found.

TELEPHONE OR VERBAL CONVERSATION RECORD

DATE 14 September 1994

For use of this form, see AR340-15; the proponent agency is the Adjutant General's Office.

SUBJECT OF CONVERSATION Jefferson Barracks, Missouri Jefferson Barracks Rifle Range, Barnhart, Missouri Jefferson Barracks Target Range, Arcadia, Missouri		
INCOMING CALL		
PERSON CALLING	ADDRESS	PHONE NUMBER AND EXTENSION
PERSON CALLED	OFFICE	PHONE NUMBER AND EXTENSION
OUTGOING CALL		
PERSON CALLING Bob Tenholder Charles Camillo	ADDRESS CELMS-PM-M CELMS-PD-A	PHONE NUMBER AND EXTENSION 314-331-8786 314-331-8789
PERSON CALLED Various members	OFFICE Veterans of the 6th Infantry Association	PHONE NUMBER AND EXTENSION POC Mr. W.H.Barbee 314-843-3429

SUMMARY OF CONVERSATION:

Mr. Tenholder and Mr. Camillo met with veterans of the 6th Infantry Division, during their monthly meeting, to discuss the Division activities at Jefferson Barracks and associated sites during the 1930s and 1940s. These veterans had different memories of their experiences with munitions depending on their different skills and units they were assigned to. In general, the members of the group remember much of their training with weapons taking place at the Arcadia Target Range. The veterans recalled using .30 cal rifles at the main firing range. They also remember training with rifle grenades at this rifle range. The rifle grenades just were fired down range for familiarization. Some were practice and some HE.

Practice and HE hand grenades were used in an area east of the main rifle range and south of the pistol range. Two veterans identified on a 1930's photograph of Arcadia a mound of soil which they thought was the grenade range.

Some members also remembered tanks firing at the semi-developed range to the west of the rifle range. The tanks fired their new .50 caliber machine-guns and the 37mm guns. The tanks generally fired down range at a target using the hills as a backstop. One veteran remembered firing at a large white rock as the aiming point. 1 pound Howitzer and 81mm mortar practice was also remembered as taking place in the same vicinity.

Another veteran remembered firing the 81mm mortars from near the cantonment area east to targets placed at the wood line on the edge of the reservation.

Several veterans remembered taking chemical warfare training at the Arcadia. They thought it was only tear gas being used.

While at Jefferson Barracks some veterans remembered using blue practice hand grenades on the main parade ground. There were two ranges at JB where rifles and machine guns were fired.

No veteran remembered ever using the rifle range at Barnhart, nor could they shed any light on the location of the training areas used by the Army Air Force during WWII. Nor did any veteran remember training with land mines or a bazooka. They said those weren't developed until WWII.

Several veterans remembered taking chemical warfare training at Jefferson Barracks. They remembered wearing there gas masks and going through a tent. One veteran remembered smell identification training with Lewisite and Mustard Gas. He said this particular training took place near the old cemetery.

Mr. Carl Link, who was born at Jefferson Barracks in 1914, remembered hooking a rifle grenade with his fishing pole while fishing in the Mississippi River in 1928. He thought it was an anchor and took it home where his father a Sergeant Major recognized the danger.

APPENDIX F
NEWSPAPERS/JOURNALS
NOT USED

APPENDIX G

PRESENT SITE PHOTOGRAPHS



Rocky bluff located south of rifle range berm area.



Location of former berm area.



Location of former machine gun range.



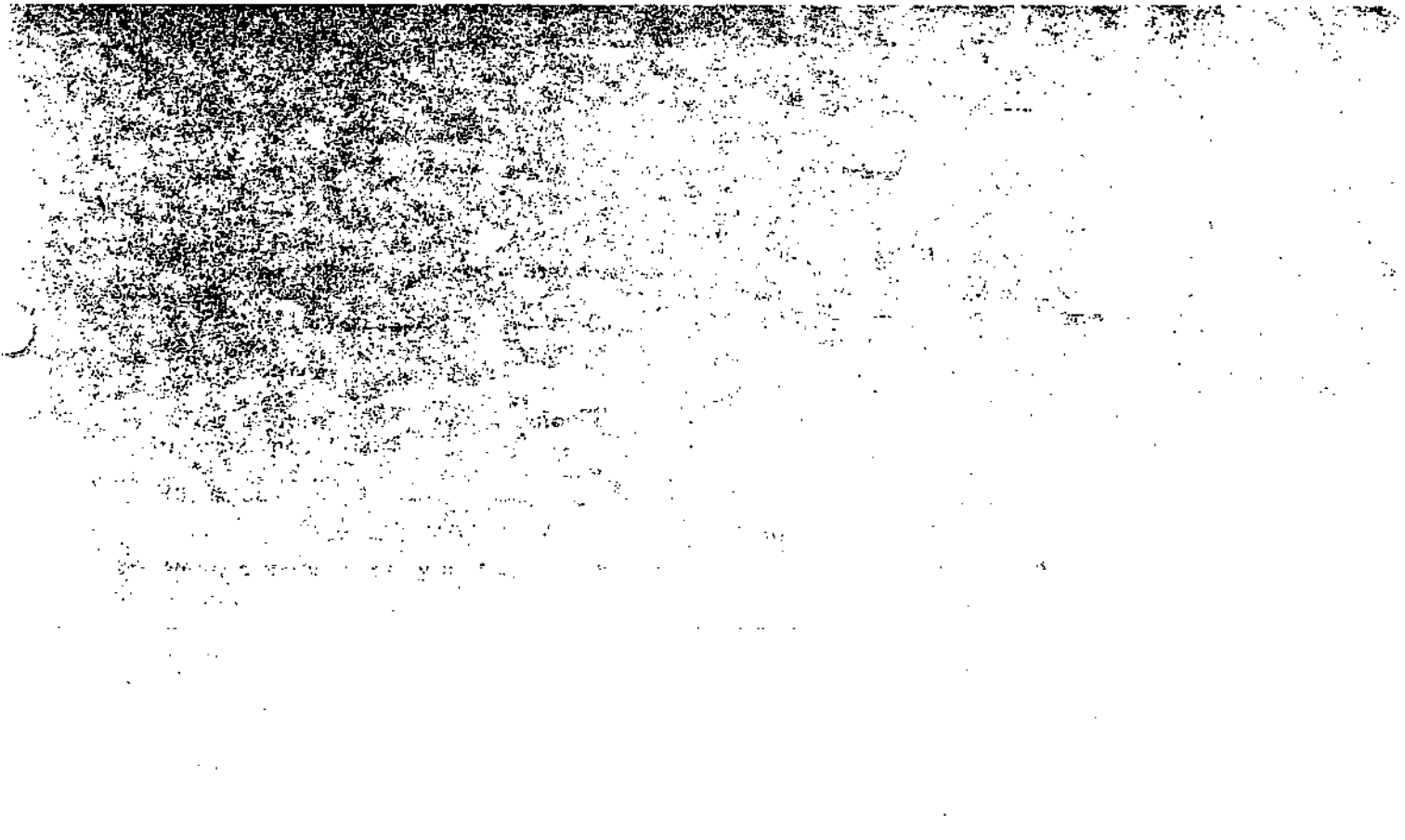
Facing north toward the firing points of rifle range.



Area of berm raised by farmers after DoD use.

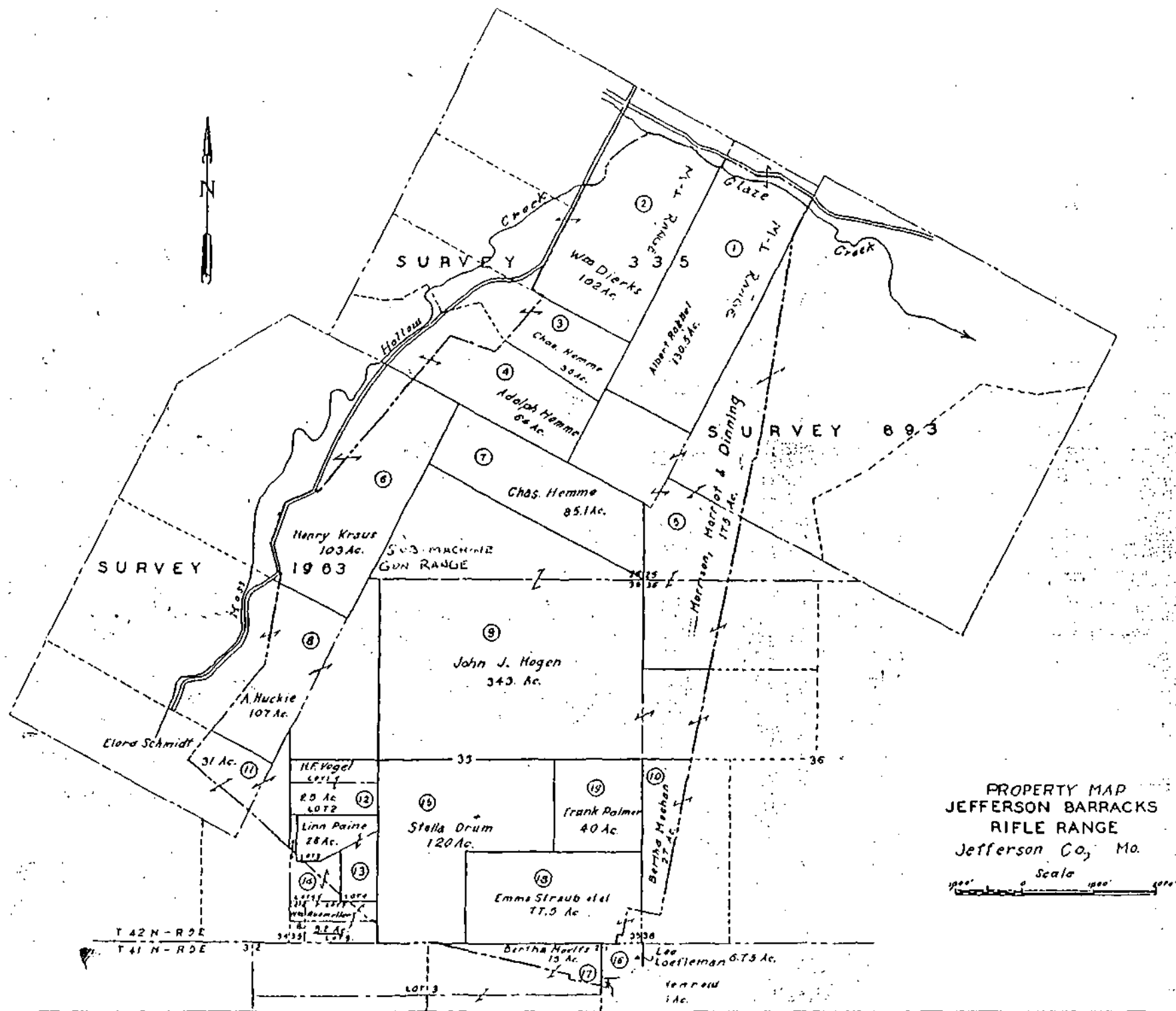


The former bivouac area.



APPENDIX H

HISTORICAL MAPS/DRAWINGS



APPENDIX I

RISK ASSESSMENT PROCEDURES FOR OEW SITES

RISK ASSESSMENT PROCEDURE FOR
ORDNANCE AND EXPLOSIVE WASTE (OEW) SITE

Site Name Jefferson Barracks Rifle Range Rater's Name CHARLENE BOECKLEN
Site Location Jefferson County, Mo Phone No. 314-331-8896
DERP Project# B07MO014501 Organization CElms-Pm-M
Date Completed 5 OCTOBER 1994 RAC Score 5

OEW RISK ASSESSMENT:

This risk assessment procedure was developed in accordance with MIL-STD 882C and AR 385-10. The RAC score will be used by CEHND to prioritize the remedial action at Formerly Used Defense Sites. The OEW risk assessment should be based upon best available information resulting from records searches, reports of Explosive Ordnance Disposal (EOD) detachment actions, and field observations, interviews, and measurements. This information is used to assess the risk involved based upon the potential OEW hazards identified at the site. The risk assessment is composed of two factors, hazard severity and hazard probability. Personnel involved in visits to potential OEW sites should view the CEHND videotape entitled "A Life Threatening Encounter: OEW."

Part I. Hazard Severity. Hazard severity categories are defined to provide a qualitative measure of the worst credible mishap resulting from personnel exposure to various types and quantities of unexploded ordnance items.

TYPE OF ORDNANCE
(Circle all values that apply)

A. Conventional Ordnance and Ammunition

	VALUE
Medium/Large Caliber (20mm and larger)	10
Bombs, Explosive	10
Grenades, Hand and Rifle, Explosive	10
Landmines, Explosive	10
Rockets, Guided Missiles, Explosive	10
Detonators, Blasting Caps, Fuzes, Boosters, Bursterns	6
Bombs, Practice (w/spotting charges)	6
Grenades, Practice (w/spotting charges)	4
Landmines, Practice (w/spotting charges)	4
Small Arms (.22 cal - .50 cal)	①
Conventional Ordnance and Ammunition (Select the largest single value)	_____

What evidence do you have regarding conventional OEW? .30 and .45 cal
munitions were used at the site. None found during survey

E. Chemical Warfare Materiel and Radiological Weapons

VALUE

Toxic Chemical Agents
(Choking, Nerve, Blood, Blister)

25

War Gas Identification sets

20

Radiological

15

Riot Control and Miscellaneous
(Vomiting, Tear)

5

Chemical and Radiological (Select the largest single value)

0

What evidence do you have regarding chemical/radiological OEW? None

=====

Total Hazard Severity Value

(Sum of the Largest Values for A through E--Maximum of 61)

Apply this value to Table 1 to determine Hazard Severity Category.

1

TABLE 1

HAZARD SEVERITY*

Description	Category	Hazard Severity Value
CATASTROPHIC	I	21 and greater
CRITICAL	II	10 to 20
MARGINAL	III	5 to 9
NEGLIGIBLE	IV	1 to 4
**NONE		0

* Apply Hazard Severity Category to Table 3

=====

**If Hazard Severity Value is 0, you do not need to complete Part II. Proceed to Part III and use a RAC Score of 5 to determine your appropriate action.

C. Numbers of buildings within a 2 mile radius measured from the OEW hazard area, not the installation boundary.

	VALUE
26 and over	5
16 to 25	4
11 to 15	3
6 to 10	2
1 to 5	1
0	0

Number of Buildings (Select the single largest value) 0

Narrative NONE

D. Types of Buildings (within a 2 mile radius)

	VALUE
Educational, Child Care, Residential, Hospitals, Hotels, Commercial, Shopping Centers	5
Industrial, Warehouse, etc.	4
Agricultural, Forestry, etc.	3
Detention, Correctional	2
No Buildings	0
Types of Buildings <u>(Select the largest single value)</u>	<u>0</u>

Describe types of buildings in the area. none

 Total Hazard Probability Value
 (Sum of Largest Values for A through F--Maximum of 30) 0
 Apply this value to Hazard Probability Table 2 to determine
 Hazard Probability Level.

TABLE 2

HAZARD PROBABILITY

Description	Level	Hazard Probablitiy Value
FREQUENT	A	27 or greater
PROBABLE	B	21 to 26
OCCASIONAL	C	15 to 20
REMOTE	D	8 to 14
IMPROBABLE	E	less than 8

* Apply Hazard Probability Level to Table 3.

APPENDIX J

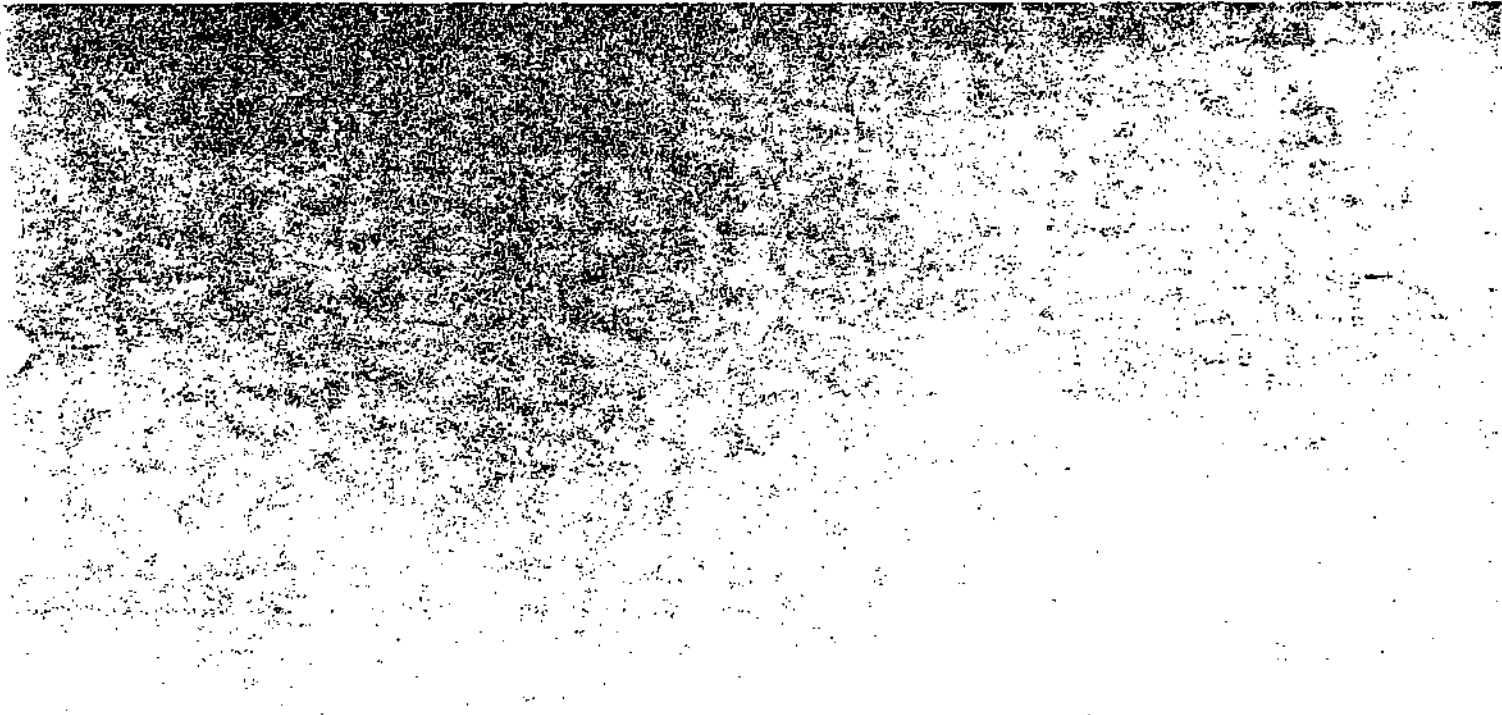
REPORT DISTRIBUTION LIST

Ordnance and Explosive Waste
Chemical Warfare Material
Archives Search Report
for the former
Jefferson Barracks Rifle Range
Barnhart, Missouri
Project Number - B07MO014500

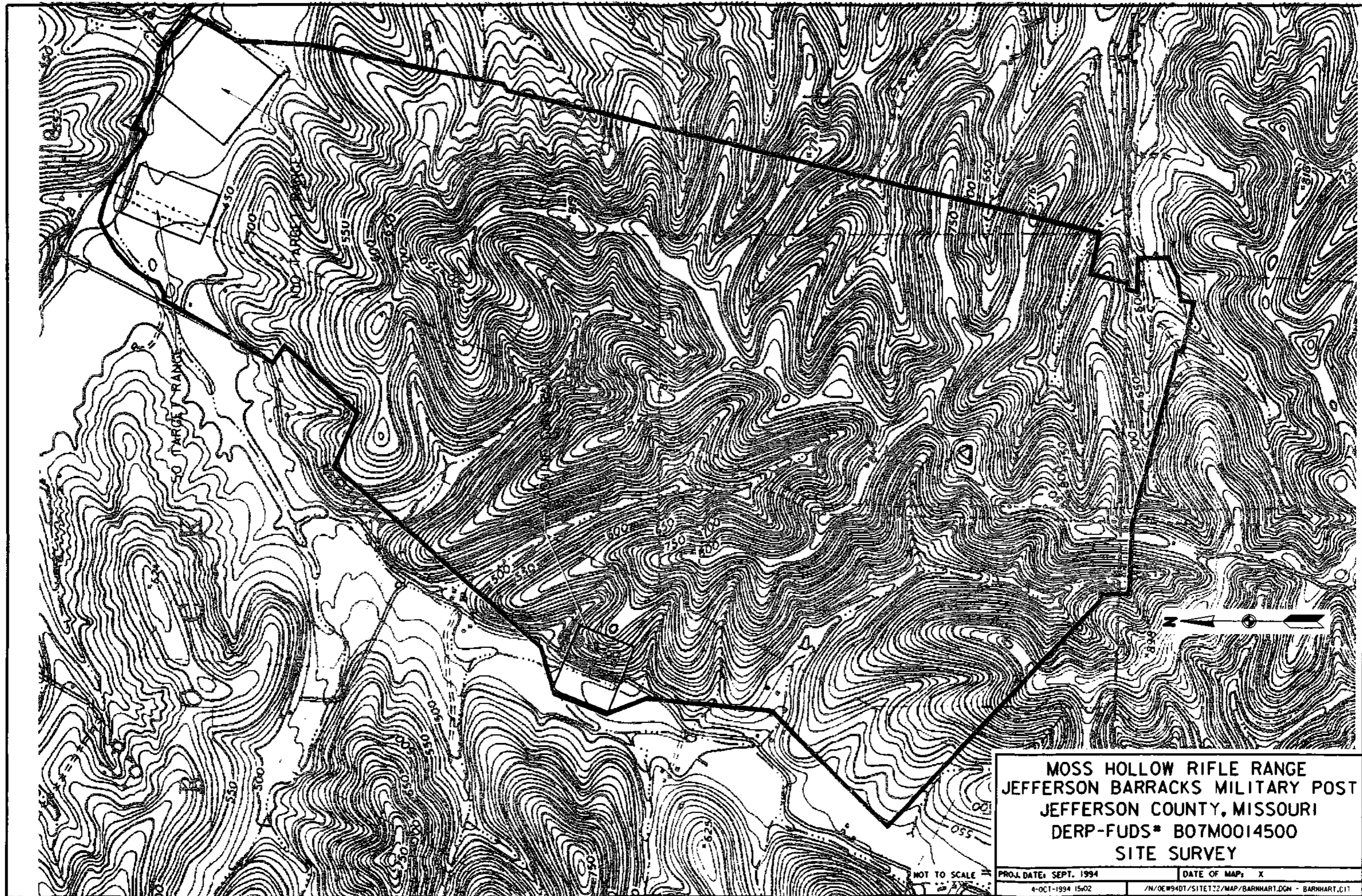
APPENDIX J

REPORT DISTRIBUTION LIST

<u>Addressee</u>	<u>No. Copies</u>
Commander, U.S. Army Engineer Division Huntsville, ATTN: CEHND-ED-SY P.O. Box 1600 Huntsville, Alabama 35807-4301	4
Commander, U.S. Chemical & Biological Defense Command ATTN: AMSCB-CIH, Bldg. E5183 Aberdeen Proving Ground, Maryland 21010-5423	1
Commander, U.S. Chemical Material Destruction Agency ATTN: SFIL-NSM, Bldg. E4585 Aberdeen Proving Ground, Maryland 21010	1
U.S. Army Technical Center for Explosives Safety ATTN: SMCAC-ESM Savanna, IL 61074-9639	1
Commander, U.S. Army Engineer District ATTN: CENAB-EN Fallon Federal Bldg. 31 Hopkins Plaza, Room 1532 Baltimore, MD 21201	1
CELMS-ED-G	1
-ED-H	1
-PD	1
-PM-M	1



PLATES



MOSS HOLLOW RIFLE RANGE
JEFFERSON BARRACKS MILITARY POST
JEFFERSON COUNTY, MISSOURI
DERP-FUDS* B07M0014500
SITE SURVEY

NOT TO SCALE

PROJ. DATE: SEPT. 1994

DATE OF MAP: X

4-OCT-1994 15:02

/N/OEW94DT/SITET22/MAP/BARNHART.DGN - BARNHART.CIT